

Students as Computers

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A teacher for the new millennium. I can't think about 1000 years from now. A teacher for the century? How about 20 years? That's when today's beginning teachers will be leading their profession.

About twenty years ago the first IBM PCs appeared, with 16 kilobytes of primary memory. That's 1/1000 of what some of today's palm computers have. And as computers have shrunk to the point of becoming biological, our biological selves have become computerized, with pacemakers and artificial organs. Moreover, we've been finding amazing insights about the human brain.

At this exponential growth rate, in 20 years our personal digital assistants may well be implanted in our brains. We won't need to type, or even speak, to check our schedules, visualize a graph, or access information. With the push of a mental "button," we will be able to tell our personal biocomputer to do a calculation, consult a data base of images, find late-breaking news, or transmit an idea to someone else.

Does it sound silly, then, to ask "What knowledge, attitudes, and/or skills will be required of a teacher" in this kind of world? After all, will there even be teachers in a world in

which learning will be accomplished automatically? In a world in which we can have any knowledge or skills we want, just by thinking appropriate thoughts?

Of course, these questions ignore the inertia of the monstrous schooling system. More importantly, they miss the point that learning is not the acquisition of information and skills. Learning is the organizing of information into knowledge, about sense-making. And our imaginations just can't stretch to show how a biocomputer could make meaning for us.

But just as some teachers do help students make meaning now, teachers can still be doing that in 2022. They'll still be creating environments in which students' sense-making is valued. In such an environment, students will still be seeking help with this important life task—both analytical and emotional help that well-prepared teachers will be able to give.

So maybe it's not silly to ask what knowledge, attitudes, and/or skills will be common to effective teachers in 2020 and beyond:

- Knowledge: Millennium teachers will have extensive experience in creating their own knowledge, in making their own meaning—of a variety of life experiences as well as ideas in an academic area.
- Attitudes: Millennium teachers will believe that meaning-making is an important activity for students—indeed, one of the most important activities for humans.
- Skills: Millennium teachers will be able to articulate helpful approaches to meaning-making. Using technological and communication skills, they'll be able

to create environments in which students want to make meaning. And teachers will be able to give the emotional support necessary for that activity.

It's time for schools and parents and communities and professional educators to turn their attentions toward supporting meaning-making by students and future teachers, and away from testing how well students can imitate biocomputers.